

Poster III-50

Biomedical Computing in the Environmental Health Sciences at Mississippi State University: Planning Grant Activities Including Development of a Grid Computing Environment

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Mississippi State University (MSU) currently has a planning grant from the National Institute of Environmental Health Sciences to prepare MSU for an application for a biomedical computing research center targeting computational simulation in the environmental health sciences. This grant is part of the planning grants associated with NIH's National Program of Excellence in Biomedical Computing. Our activities at MSU have been organized by the Co-PI's Joe Thompson from the computational perspective and Janice Chambers from the biomedical perspective. This effort builds on the foundation of computational science established in the successfully graduated NSF Engineering Research Center and biomedical science established in the largely NIH-funded Center for Environmental Health Sciences at Mississippi State. Our plans have included the identification of key faculty who are committed to cross-training and collaboration, organization of cross-training seminars by outside speakers as well as MSU faculty and the facilitation of interdisciplinary research projects. One element of infrastructure development that we are building is the construction of a Grid computing environment that provides a user-friendly interface for the Grid. This portal hides the inherent complexity of the heterogeneous Grid environment, and thus makes the Grid resources available for scientists, including those with only modest experience with high performance computing. In addition to a seamless remote resource allocation (job submission and monitoring), access to remote file systems and databases, and file transfers, the portal introduces metadata services. Through the metadata, the users can share applications and data. In particular, novice users can use complex applications installed and configured by experts. The portal thus acts as an application service, providing both the hosting environment for applications and intuitive graphical user interfaces for the applications. This portal will be applied to specific biomedical computing research efforts in the interdisciplinary research projects that are developing at present.

This research is supported by NIH grant P20 ES11278 and NSF grants EIA0103594 and EPS0132618.